IC Tech, Inc. Company Information and Capability Statement

<u>Summary:</u> IC Tech was established in 1993 with the goal of developing and licensing innovative biologically and neurally inspired systems and technologies. IC Tech technologies equip computers, communication devices, and automotive electronic systems with audio-visual means of human-machine interaction, while at the same time offering the users of these tools greater freedom of movement, privacy and convenience. For more information, please visit www.ic-tech.com.

<u>Technical Personnel:</u> IC Tech currently has eight employees, most of them holding various technical degrees (B.S., M.S., and/or Ph.D) in Electrical Engineering and Computer Science. Company offers both hardware and software expertise for rapid prototyping and concept demonstrations. Company's President is Dr. Gail Erten, who leads two technical teams at IC Tech engaged in developing intelligent human-machine interfaces, namely the speech technologies team and the image processing technologies team. She holds a Ph.D. degree from the California Institute of Technology.

<u>SIC Codes :</u> 8731, 8711, 7371, 7372, 7373

<u>Areas of Expertise:</u> Biologically Inspired Systems, Human-Machine Interfaces, Smart Multimedia Interfaces, Multimedia Programming, Digital Signal Processing, Single and Multi Camera -PC Integration, Image Processing, Speech Processing, Signal to Noise Ratio Enhancement / Noise Reduction, CMOS VLSI Design, CMOS Image Sensors, Embedded Design

<u>Consultants and Prototyping Support:</u>   IC Tech has on-going arrangements with several consultants, whose combined expertise span a broad range of technical fields, such as IC design and layout, multimedia programming, robotics, sensors, dynamic systems, and advanced adaptive signal processing, and control. Moreover, the company has established relationships with multiple vendors for IC manufacturing, PCB board and mechanical enclosure prototype manufacturing and assembly.

<u>Ongoing R&D Contacts:</u> Three SBIR Phase II Contracts, two related to image and one related to audio signal processing; and commercial R&D contracts for technology development and licensing, product development, and support in the areas of vision and speech processing

<u>Licensed Technologies and Products:</u> Voice Extraction for enhanced voice signal intelligibility, recognition and speech coding; Audio Visual Speech Recognition (AVSR); LightMouse ™ for visual interaction with a display, see www.lightmouse.com

<u>Facilities and Equipment:</u> IC Tech facilities occupy about 2600 sq.ft in Okemos Michigan, five miles east of the state capital of Lansing. Current facilities include commercial office equipment, networked personal computers with Windows NT server, DSP development environments, tools for custom hardware design, digital and analog circuit simulators, VLSI custom and semicustom design and mixed mode circuit simulation, as well as computer networking that ties all of this equipment together and provides access to the Internet through a firewall. A wide range of circuit testing facilities are available for detailed test, debug, and dynamic features for data acquisition, processing, custom setups for characterization of hardware and signal processing software. Two test stations consisting of a computer and measurement equipment (oscilloscopes, spectrum analyzers, programmable sources, and signal generators) also offer computer interfaces. The testing lab is also networked to the company computers, which allows for comparison of measured results and simulated results. Additional facilities include sound room (semi-anechoic sound chamber for audio testing), algorithm development platforms constructed over the past several years by IC Tech engineers for prototyping and audio and video signal processing concepts. The audio signal processing framework integrates a custom set of modular processing libraries, a graphical user interface, various microphone / amplifier / filter assemblies, programmable Digital Signal Processor development environments composed of compilers, assemblers, linkers and a plug-in PC card capable of data acquisition, processing and output in real time and interfaces with MATLAB and SIMULINK through a Real Time Workshop link, and a dynamic signal acquisition and processing environment that uses National Instrument's data acquisition cards and LABVIEW and LABWINDOWS/CVI suites. The video signal processing framework integrates several types of cameras at various frame rates, PCI frame grabbers, a variety of lenses, optical filters into a Visual C/C++ based PC image software development platform.

<u>Contact:</u>
Gail Erten, Ph.D.
President
IC Tech, Inc.
4295 Okemos Road Suite 100
Okemos, MI 48864
erten@ic-tech.com
(517) 349-9000
(517) 349-2559 (FAX)
www.ic-tech.com